1. Color band extraction

a=imread('peppers.png');

imshow(a);

b = a(:,:,1);

c = a(:,:,2);

d = a(:,:,3);

a(100, 200, 2);

[e, f] = size(a);

z=zeros(size(a,1),size(a,2));

R = cat(3,b,z,z);

G = cat(3,z,c, z);

B = cat(3, z, z,d);

0 = cat(3,b,c,d);

subplot(2,3, 2);

imshow (0), title('original image');

subplot(2,3,4);

imshow(R), title('red image');

subplot (2,3,5);

imshow (G), title('green image');

subplot(2,3,6);

imshow(B), title('blue image');

2. flip a image

close all;

clear all;

a=imread('lab2\_1.tif');

[r c]=size(a);

for i=1:c

b(:,c+1-i)=a(:,i);

end

subplot (131), imshow(a), title('Original Image')

subplot (133), imshow (b), title('Mirror Image')

3. Image negative

close all;

clear all;

I=imread('Lab4\_1.jpg');

I=im2double(I);

for i=1:size(I,1)

for j=1:size(I,2)

I1(i,j)=1-I(i,j);

end

end

subplot(121),imshow(I),title('original image')

subplot(122),imshow(I1),title('enhanced image (image negative)')

4. power law transformation

close all;

clear all;

clc;

I=imread('Lab4\_2.tif');

I=im2double(I);

c=input('Enter the value of the constant c=');

g=input('Enter the value of gamma g=');

for i=1:size(I,1)

for j=1:size(I,2)

I3(i,j)=c\*I(i,j)^g;

end

end

subplot(121), imshow(I),title('original image')

subplot(122), imshow(I3),title('power-low transformation')

5. averaging filter

%ex2.m

close all

clear all

clc

%%%%%averaging filter%%%%

%%%II) for large object extraction:

I-imread('Lab6\_2.jpg');

imshow(I), title('original')

M15=fspecial('average',15);

J15 imfilter (I,M15);

M25=fspecial('average',25);

J25=imfilter (I,M25);

K15=im2bw (J15); %im2bw Convert image to binary

K25=im2bw (J25);

figure (2)

subplot (221), imshow(J15), title('Filtered by 15X15')

subplot (222), imshow (J25), title('Filtered by 25X25')

subplot (223), imshow (K15), title('Thr. 15X15')

subplot (224), imshow(K25), title('Thr. 25X25')

6. median filter

%ex3.m

close all

clear all

clc

% 2) Median Filter:

I-imread('Lab6\_3.jpg');

In=imnoise (I, 'salt & pepper',0.2);

Ic-medfilt2(In);

subplot (131), imshow(I), title('original')

subplot (132), imshow(In), title('Noisy')

subplot (133), imshow(Ic), title('Filtered')

7. image enhancement using substraction

clc;

close all;

clear all;

I=imread('saturn.tif');

I1=imread('saturn2.tif');

if length(size(I))>2 %length must be 2(gray)

I=rgb2gray(I);

end

if length(size(I1))>2

I1=rgb2gray(I1);

end

I2=I-I1;

I3=histeq(I2);

subplot(221),imshow(I),title('First Image');

subplot(222),imshow(I1),title('Second Image');

subplot(223),imshow(I2),title('Difference Image');

subplot(224),imshow(I3),title('Enhanced Difference Image');

8. logarithmic transformation

a=imread('Penguins.jpg')

subplot(2,2,1)

imshow(a);

title 'Original Image'

b=im2double(a)

s=(1\*log(1+b))\*256;

s1=uint8(s)

subplot(2,2,2)

imshow(s1);

title 'c=1'

sp=(2\*log(1+b))\*256;

s2=uint8(sp)

subplot(2,2,3)

imshow(s2);

title 'c=2'

sp2=(3\*log(1+b))\*256;

s3=uint8(sp2)

subplot(2,2,4)

imshow(s3);

title 'c=3'

9. fourier

%ex1.m

close all

clear

clc

%====================================

% 1) Displaying the Fourier Spectrum:

%====================================

I=imread('Lab8\_1.jpg');

I=im2double(I);

FI=fft2(I); %(DFT) get the frequency for the image

FI\_S=abs(fftshift(FI));%Shift zero-frequency component to center of

img\_spectrum.

I1=ifft2(FI);

I2=real(I1);

subplot(131),imshow(I),title('Original'),

subplot(132),imagesc(0.5\*log(1+FI\_S)),title('Fourier Spectrum'),axis off

subplot(133),imshow(I2),title('Reconstructed')

%imagesc: the data is scaled to use the full colormap

Histogram equilization

I = imread('pout.tif');

J = histeq(I);

subplot(2,2,1);

imshow( I );

subplot(2,2,2);

imhist(I)

subplot(2,2,3);

imshow( J );

subplot(2,2,4);

imhist(J)